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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 05/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/850,367

Applicant(s)

HA ET AL.

Examiner

HOAN C. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following features:

- the fixing means comprises **both** projections formed on the rear surface of the receiving means and guide grooves formed on the rear surface of the receiving means (claim 1).
- “the fixing means has a lower height than a highest height of circuit elements constructing the printed circuit board” in claims 19 and 42;
- “the receiving means having a first clocking structure formed on a bottom surface” and “fixing means has second locking structure form thereon (the printed circuit board?)” in claims 20 and 43;
- “an area shielding means on which the third locking means is formed” in claims 23 and 49;

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Murai (US5986726A).

Murai teaches (Fig. 1) a liquid crystal display device comprising:

- displaying means (display panel 5) for displaying an image;
- receiving means (the light guiding plate 7) for receiving the displaying means;
- a printed circuit board 4 installed on a rear surface of the receiving means, for controlling an operation of the displaying means;
- shielding means (metal sheet 1) mounted on the rear surface of the receiving means, for shielding an electromagnetic wave from the displaying means and the printed circuit board.
- a connecting cable for connecting the displaying means to the printed circuit board (claim 7).

wherein

- the printed circuit board is power supplying means for supplying a power to the displaying means, which is mounted on the rear surface of the receiving means,

or converting means for converting a signal supplied to the displaying means, which is installed on the rear surface of the receiving means (claim 8).

- the shielding means has a connection opening formed at a side wall at an end thereof, through which lines for supplying a desired voltage to the printed circuit board is connected to the printed circuit board (claim 9).
- the connection opening has a closed shape in that part of the connection opening is connected to each other, in order to improve a shielding efficiency of the electromagnetic wave by means of the shielding means (claim 10).

2. Claims 13-14 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Gruenberg et al. (US5313318A).

Gruenberg et al. teach (Fig. 1) a liquid crystal display device comprising:

- displaying means (LCD 10) for displaying an image;
- receiving means (the light guiding plate 7) for receiving the displaying means;
- a printed circuit board 4 mounted on a rear surface of the receiving means, for controlling an operation of the displaying means;
- a connection cable for connecting the displaying means to the printed circuit board;
- fixing means (crews 9) for fixing the printed circuit board to the receiving means.

wherein

- the printed circuit board is fixed to the rear surface of the receiving means to be placed between the displaying means and the fixing means (claim 14).

3. Claims 13-19 and 34-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Murai et al. (US5986726A).

Murai et al. teach (Figs. 1-4) a liquid crystal display device comprising:

- displaying means (LCD 5) for displaying an image;
- receiving means (a plastic light guide 14) for receiving the displaying means;
- a printed circuit board 19 mounted on a rear surface of the receiving means, for controlling an operation of the displaying means;
- a connection cable for connecting the displaying means to the printed circuit board;
- fixing means (frame 16 held up the circuit board 19)) for fixing the printed circuit board to the receiving means.

wherein

- the printed circuit board is fixed to the rear surface of the receiving means to be placed between the displaying means and the fixing means (claim 14).
- the receiving means includes a bottom chassis for receiving the display means and a mold frame for receiving the bottom chassis (claim 15).
- the printed circuit board is overlapped at an end thereof with the fixing means (claim 16).
- the fixing means is a bracket that is combined at an end with the printed circuit board and at a second end with the rear surface of the receiving means (claim 17).

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- the fixing means is combined at the first end with the printed circuit board and at the second end with a combination structure formed in the receiving means, so as to be fixed to the rear surface of the bottom chassis (claim 18).
- the fixing means has a lower height than a highest one of circuit elements constructing the printed circuit board (claims 19 and 42).

4. Claims 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US5815227A).

Lee teaches (Fig. 4) a liquid crystal display device comprising:

- a lamp unit 125 for generating a light;
- a liquid crystal display panel (LCD 100) for displaying an image in response to the light;
- receiving means (light-inducing plate 105) for receiving the lamp unit and the liquid crystal display panel,

wherein

- a plurality of supporting members (locking protrusion a) is formed on a rear surface of the receiving means to prevent the receiving means from being inclined when the lamp unit is combined with the receiving means.
- the plurality of the supporting members is projected at a predetermined height on four corners of the rear surface of the receiving means (claim 33).

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang (US6256075B1).

Yang teaches (Figs. 2-3) a liquid crystal display device comprising:

- displaying means (display panel 13) for displaying an image;
- receiving means for receiving the displaying means;
- a printed circuit board 15 installed on a rear surface of the receiving means, for controlling an operation of the displaying means;
- shielding means (40) mounted on the rear surface of the receiving means, for shielding an electromagnetic wave from the displaying means and the printed circuit board.
- a connecting cable for connecting the displaying means to the printed circuit board (claim 7).

wherein

- the printed circuit board 40 is power supplying means for supplying a power to the displaying means, which is mounted on the rear surface of the receiving

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means, or converting means for converting a signal supplied to the displaying means, which is installed on the rear surface of the receiving means (claim 8).

- the shielding means has a connection opening formed at a side wall at an end thereof, through which lines for supplying a desired voltage to the printed circuit board is connected to the printed circuit board (claim 9).
- the connection opening has a closed shape in that part of the connection opening is connected to each other, in order to improve a shielding efficiency of the electromagnetic wave by means of the shielding means (claim 10).
- the shielding means 40 has a plurality of through-holes 41 formed at a position corresponding to a predetermined portion of the power supplying means in order to discharge heat from the power supplying means (claim 11).
- the plurality of through-holes 41 is formed to face of the printed circuit board, thereby, holes are faced to a transformer of the power supplying means on the printed circuit board.

6. Claims 20-31 and 34-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang (US6256075B1).

Yang teaches (Figs. 2-3) a liquid crystal display device comprising:

- receiving means (in display panel 13) for receiving an image displaying means, the receiving means having at least one of a first locking structure formed on a bottom surface (rear bracket 14 supporting the rear portion of the LCD panel 13)

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- a printed circuit board 15 installed on a rear surface of the receiving means, for operating the displaying means;
- fixing means (crews) which is combined with the printed circuit board and which has at least one of a second locking structure formed thereon;
- shielding means for shielding an electromagnetic wave from the printed circuit board, the shielding means being mounted on the rear surface of the receiving means and having at least one of a third locking structure formed thereon,

wherein

- the shielding means and the printed circuit board are fixed to the receiving means in such a manner as locking means extend through the corresponding locking structure of the first, second and third locking means from an outside of the shielding means to the displaying means and are respectively combined with the corresponding locking structure.
- the receiving means includes a bottom chassis for receiving the displaying means and a mold frame for receiving the bottom chassis (claims 21 and 44).
- the locking means is combined at a first end with the printed circuit board and at a second end with the locking structure formed on the receiving means so as to be fixed to a rear surface of the bottom chassis (claims 22 and 45).
- an area of the shielding means on which the third locking means is formed is depressed toward the displaying means (claims 23 and 49).
- the first, second and third locking structures of the shielding means respectively have a screwed hole through which screws are respectively extended.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US5815227A) in view of Oyama et al. (US5808708A).

Lee teaches (Fig. 4) a liquid crystal display device comprising:

- light generating means 125 for generating a light;
- receiving means (light-inducing plate 105) for receiving the light generating means;
- power supplying means 145;
- fixing means formed on the receiving means, for guiding the power supplying lines to the power supplying means and preventing the power supplying lines from being departed from the receiving means; wherein the fixing means comprises
 - a plurality of projections (locking protrusion a) formed and spaced apart from one another at a predetermined distance on the rear surface of the receiving means,
 - guide grooves (locking hole a') formed on the rear surface of the receiving means.

However Lee (US5815227A) fails to disclose power-supplying means mounted on a rear surface of the receiving means, for supplying a power to the light generating means; power supplying lines connected between the light generating means and the power supplying means, for supplying the power to the light generating means for increasing the ratio of emitting area;

Oyama et al. teach (Fig. 3) power supplying means (a light source control circuit 16) mounted on a rear surface of the receiving means, for supplying a power to the light generating means; power supplying lines connected between the light generating means and the power supplying means, for supplying the power to the light generating means for increasing the ratio of emitting area; thereby, the power supplying means 16 being disposed on the rear surface of the bottom chassis and the fixing means is formed on the mold frame to be placed between the power supplying means and the light generating means (claim 5).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Lee disclosed with power supplying means mounted on a rear surface of the receiving means, for supplying a power to the light generating means; power supplying lines connected between the light generating means and the power supplying means, for supplying the power to the light generating means for increasing the ratio of emitting area.

2. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US5966191A) in view of Oyama et al. (US5808708A).

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Lee teaches (Figs. 1, 5) a liquid crystal display device comprising:

- light generating means 22 for generating a light;
- receiving means (light guide plate 15) for receiving the light generating means;
- fixing means formed on the receiving means, for guiding the power supplying lines to the power supplying means and preventing the power supplying lines from being departed from the receiving means.

wherein

- the light generating means is a cold cathode type of a fluorescent lamp (claim 3).
- the receiving means includes a bottom chassis for receiving the light generating means and a mold frame 31 for receiving the bottom chassis, which has an opening formed in a bottom surface of the mold frame (claim 4).

However, Lee (US5966191A) fails to teach power supplying means mounted on a rear surface of the receiving means, for supplying a power to the light generating means; power supplying lines connected between the light generating means and the power supplying means, for supplying the power to the light generating means.

Oyama et al. teach (Fig. 3) power supplying means (a light source control circuit 16) mounted on a rear surface of the receiving means, for supplying a power to the light generating means; power supplying lines connected between the light generating means and the power supplying means, for supplying the power to the light generating means for increasing the ratio of emitting area; thereby, the power supplying means 16 being disposed on the rear surface of the bottom chassis and the fixing means is

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formed on the mold frame to be placed between the power supplying means and the light generating means (claim 5).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Lee disclosed with power supplying means mounted on a rear surface of the receiving means, for supplying a power to the light generating means; power supplying lines connected between the light generating means and the power supplying means, for supplying the power to the light generating means for increasing the ratio of emitting area.

3. Claims 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US5966191A) in view of Oyama et al. (US5808708A).

Lee teaches (Figs. 1, 2 and 5) a monitor having

- a front case defining an effective scene area,
- a rear case enclosing a liquid crystal display device by a combination with the front case and the liquid crystal display device disposed between the front and rear cases,

wherein the liquid crystal display device comprises:

- displaying means 10 for displaying an image;
- receiving means 20 for receiving the displaying means;

wherein the receiving means includes a bottom chassis for receiving the displaying means and a mold frame for receiving the bottom chassis, which has an opening

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formed in a bottom surface so as to expose a bottom surface of the bottom chassis (claim 51).

However, Lee fails to disclose a printed circuit board for controlling an operation of the displaying means, the printed circuit board directly facing to and being mounted on a rear surface of the receiving means.

Oyama et al. teach (Fig. 3) a printed circuit board for controlling an operation of the displaying means, the printed circuit board directly facing to and being mounted on a rear surface of the receiving means for increasing the ratio of emitting area.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Lee disclosed with a printed circuit board for controlling an operation of the displaying means, the printed circuit board directly facing to and being mounted on a rear surface of the receiving means for increasing the ratio of emitting area.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- NAKAMURA et al. (JP406148670A) disclose LIQUID CRYSTAL MODULE with surrounding the input wiring of a driving IC made into a tape carrier through an insulating material with a shield conductor and electrically grounding the shield conductor for reducing the radiation of electromagnetic wave.

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- Lee (US 5988827A) disclose a display devices having rounded corner backlight unit with means for fixing the light guide panel in spaced apart relation to the light source, the fixing means including at least one rounded corner, the rounded corner operative to reduce non-uniform concentration of light from the light source in the light guide panel.
- Sakamoto et al. (US 6522371B1) disclose a liquid crystal display with a mold frame and a lamp cover composing a liquid crystal display are fixed without using a screw and without increasing the thickness of the liquid crystal display.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (703) 306-0472. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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May 8, 2003

TOANTON
PRIMARY EXAMINER